DOCUMENT RESUME

ED 463 764 IR 058 447

AUTHOR	Shim, Wonsik "Jeff"; McClure, Charles R.; Fraser, Bruce T.; Bertot, John Carlo
TITLE	Data Collection Manual for Academic and Research Library Network Statistics and Performance Measures.
INSTITUTION	Florida State Univ., Tallahassee. Information Use Management and Policy Inst.; Association of Research Libraries, Washington, DC.
PUB DATE	2001-12-00
NOTE	57p.; PowerPoint instructional modules are not available from ERIC.
AVAILABLE FROM	ARL Publications Distribution Centers, P.O. Box 531, Annapolis Junction, MD 20701-0531. Tel: 301-362-8196; Fax: 301-206-9789; e-mail: pubs@arl.org; Web site: http://www.arl.org/pubscat/index.html. For full text: http://www.arl.org.
PUB TYPE	Guides - Non-Classroom (055) -- Reports - Descriptive (141)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	Academic Libraries; Higher Education; Information Utilization; Internet; *Library Services; *Library Statistics; *Research Libraries; *Users (Information)
IDENTIFIERS	Electronic Resources; *Performance Indicators

ABSTRACT

This manual provides a beginning approach for research libraries to better describe the use and users of their networked services. The manual also aims to increase the visibility and importance of developing such statistics and measures. Specific objectives are: to identify selected key statistics and measures that can describe use and users of electronic and networked services; to standardize procedures and definitions to collect these statistics and measures; and to increase awareness of selected issues related to collecting, analyzing, and reporting the data to produce these statistics and measures. Definition, rationale, implementation, special considerations, and related issues are described for network statistics in the following categories: patron accessible electronic resources; use of networked resources and services; expenditures for networked resources and related infrastructure; and library digitization activities. Definition, rationale, implementation, special considerations, and related issues are also described for performance measures. Appendices include a list of statistics considered and forms for data collection. (MES)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 463 764

Data Collection Manual for Academic and Research Library Network Statistics and Performance Measures

Wonsik "Jeff" Shim, Charles R. McClure,
Bruce T. Fraser, John Carlo Bertot

DECEMBER 2001

INFORMATION USE MANAGEMENT AND POLICY INSTITUTE

School of Information Studies
Florida State University
Tallahassee, Florida 32306-2100
http://www.ii.fsu.edu

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

C.R. McClure

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ASSOCIATION OF RESEARCH LIBRARIES
WASHINGTON, DC

IR058447

BEST COPY AVAILABLE

Acknowledgments

The need for developing standardized definitions and procedures for selected electronic and networked statistics and measures for Association of Research Libraries is significant. Thus, the statistics, measures, and issues described in this report provide an important first step in describing users, uses, and impacts from electronic and networked services.

The report could not have been completed successfully without the assistance of a number of individuals and organizations. First, the study team wishes to acknowledge the 24 participating member organizations that have supported the project:

University of Alberta	Arizona State University
Auburn University	University of Chicago
University of Connecticut	Cornell University
University of Illinois-Chicago	University of Manitoba
University of Maryland-College Park	University of Massachusetts
University of Nebraska-Lincoln	University of Notre Dame
University of Pennsylvania	Pennsylvania State University
University of Pittsburgh	Purdue University
University of Southern California	Texas A&M University
Virginia Polytechnic Institute and State University	University of Western Ontario
University of Wisconsin-Madison	Yale University
Library of Congress	New York Public Library, The Research Libraries

At each of these libraries, liaisons and other individuals assisted the study team by providing input and suggestions to earlier drafts, by field-testing the statistics and measures, and by attending a number of meetings and discussions regarding the content of the report. We are deeply indebted to these organizations, the directors, the liaisons, and others at those organizations that participated directly in the project.

We also want to acknowledge the participation and assistance from a number of data base vendors and providers who participated in various meetings and discussions to help develop operational definitions procedures for these statistics and measures. These include:

Academic Press/IDEAL	Bell & Howell	EBSCO
Elsevier/ScienceDirect	Gale Group	JSTOR
Lexis-Nexis	netLibrary	OCLC/FirstSearch
Ovid	SilverPlatter	

Their involvement in the project demonstrates the interest and concern they have for standardizing some of the statistics and working with the library community to achieve this goal. We look forward to continuing our work with them in the future.

From the Association of Research Libraries we especially want to thank the assistance of Martha Kyrillidou, Lee Anne George, and Duane Webster. Their advice, suggestions, handling of logistics for meetings, etc., was instrumental in helping the study team complete the project. We especially appreciate their commitment to the study and their direct consultation and input throughout the development of this report.

We especially wish to acknowledge the leadership of Carla Stoffle, Dean of Libraries at the University of Arizona and Chair of the ARL Statistics and Measurement Committee. She has been a significant force in moving the New Measures Initiative forward. Rush Miller, University Librarian and Director, University of Pittsburgh Library System, and Sherrie Schmidt, Dean of Libraries at Arizona State University, have provided extraordinary leadership in supporting this part of the New Measures agenda that deals with measures for electronic resources, E-Metrics. This project will not have been possible without their dedication, financial and moral support; Rush and Sherrie have made it possible to explore E-Metrics within the framework of the ARL New Measures Initiative, have actively encouraged the community to engage in these issues, and helped ARL move forward experimenting in this area.

We also would like to thank Priscilla Caplan and Michele Newberry at the Florida Center for Library Automation (FCLA) for their thoughtful reviews of the field-testing instructions. Bonnie Gratch-Lindauer, Coordinator of Library Instructional Services at the City College of San Francisco Rosenberg Library, has contributed significantly to the outcomes focus with her analysis of accreditation standards.

Other individuals at other organizations, such as Denise Davis at the National Commission on Library and Information Science (NCLIS), Sue Phillips from the International Consortium of Library Consortia (ICOLC), and Pat Harris from the National Information Standards Organization, also contributed their time and ideas to material in this report.

We also gratefully acknowledge the suggestions from a number of study participants. They provided the study team with excellent suggestions for improving the report. The report is clearly a stronger publication as a result of their comments and suggestions.

Finally, we would like to acknowledge the substantial contributions of other staff members at the Information Use Management and Policy Institute: Don L. Latham, Senior Research Associate, Assistant Dean and Assistant Professor, FSU School of Information Studies; Benjamin Keith Belton, Senior Research Associate, Assistant Professor, FSU School of Information Studies; Arif Dagli, Research Associate; Emily H. Leahy, Research Associate; and Linda Carruth, Research Associate. Without their efforts and insights over the course of the E-Metrics project, this Data Collection Manual would not be nearly as beneficial as we hope it will be.

Introduction

There is a critical need for academic and research libraries to develop new statistics and measures to describe network services and resources. This manual is one product of a larger New Measures Initiative by the Association of Research Libraries (ARL) <http://www.arl.org/stats/newmeas/newmeas.html>. The E-Metrics project that developed this manual is funded by a group of 24 ARL member libraries.

Based on a substantial field-testing process (described in detail in the E-Metrics Phase II report <http://www.arl.org/stats/newmeas/emetrics/>), the study team recommends a number of **network statistics** and **performance measures** that provide indicators of library networked services and resources.

For a host of reasons not explored in this manual, the final set of statistics and measures were selected among others that were considered but not discussed in detail herein. The selection of certain measures over others is not meant to imply that those not selected are flawed or have no beneficial use. See Appendix A for a table containing three lists of candidate measures considered during the E-Metrics project, and refer to Part 2 of the E-Metrics Phase II Report for a discussion of the evolution of measures.

These statistics and measures will provide research libraries with an important and useful set of tools to describe and assess network resources and services. The manual also provides libraries with guidance regarding the use to which the network statistics and measures can be put.

The manual offered here has a number of specific goals and objectives. Its primary goal is to provide a beginning approach for research libraries to better describe the use and users of their networked services. A secondary goal is to increase the visibility and importance of developing such statistics and measures. Specific objectives of the manual are to:

- Identify selected key statistics and measures that can describe use and users of electronic and networked services;
- Standardize procedures and definitions to collect these statistics and measures; and
- Increase awareness of selected issues related to collecting, analyzing, and reporting the data to produce these statistics and measures.

The statistics and measures offered here will need to be continually developed, expanded, refined, and possibly eliminated over time.

A key component of the project has been to work with vendors and other organizations regarding the collection, manipulation, and reporting of vendor-supplied online database data. Many of the statistics described here resulted from the cooperative efforts among these vendors and other national/international groups interested in developing such statistics. Such efforts should be continued.

Given the rapidly changing technology environment, the changing milieu of higher education, changing organizational structures within ARL libraries, and the

complexity of measuring such networked services, it is almost certain that the statistics and measures proposed in this manual will continue to evolve. These measurement tools, however, will provide research librarians with important techniques to count, describe, and report networked services and resources in their libraries.

ARL

Association of Research Libraries

Copyright © 2001 Association of Research Libraries
To order more copies of this manual, contact
ARL Publications Distribution Center
P.O. Box 531
Annapolis Junction, MD 20701-0531

Telephone: (301) 362-8196
Fax: (301) 206-9789
Email: pubs@arl.org

BEST COPY AVAILABLE

Table of Contents

Acknowledgements i
Introduction iii
Recommended Statistics and Measures 2
Network Statistics 2
Performance Measures 2
Criteria for Performance Statistics and Measures 3
Data Collection Procedures for Performance Statistics and Measures 5
Statistics Related to Patron Accessible Resources 5
Patron Accessible Electronic Resources 5
R1 Number of electronic full-text Journals 5
R2 Number of electronic reference sources 7
R3 Number of Electronic Books 8
Use of Electronic Networked Resources and Services 11
Use of Networked Resources and Services 11
U1 Number of electronic reference transactions 11
U2 Number of logins (sessions) to electronic databases 13
U3 Number of queries (searches) in Electronic Databases 14
U4 Items requested in electronic databases 15
U5 Virtual visits to library's website and catalog 16
Expenditures for Electronic Resources and Related Infrastructure 19
General Introduction to C1-C3 19
Expenditures for Networked Resources and Related Infrastructure 20
C1 Cost of electronic full-text journals 20
C2 Cost of electronic reference sources 21
C3 Cost of electronic books 22
C4 Library expenditures for bibliographic utilities, networks and consortia 24
C5 External expenditures for bibliographic utilities, networks, and consortia 25
Statistics Related to Library Digitization Activities 27
Library Digitization Activities 27
D1 Size of Library digital collection 27
D2 Use of library digital collection 29
D3 Cost of digital collection construction and management 30
Analysis of Suggested Performance Measures 33
Performance Measures 33
P1 Percentage of Electronic Reference Transactions of Total Reference 33
P2 Percentage of Virtual Library Visits of All Library Visits 34
P3Percentage of Electronic Books to All Monographs 35
Improving Networked Statistics 37
Appendices 39
Appendix A: List of Statistics Considered 40
Appendix B: Forms 41

Preface

This manual provides definitions, data collection procedures, and discusses related issues pertaining to interpreting and using the recommended statistics and measures. The definitions and procedures were derived from a month of field-testing at more than a dozen ARL libraries. The statistics and performance measures represent a minimum set of data that need to be collected continually and used. Individual libraries will need to develop local procedures to support data collection activities within the guidelines of this manual. However, readers need to recognize that the statistics and measures will be refined and extended continually in the future. PowerPoint instructional modules to accompany this manual are available from ARL.

Data Collection Manual for Academic and Research Library Network Statistics and Performance Measures

Recommended Statistics and Measures

Network Statistics

Patron Accessible Electronic Resources

- ❒ R1 Number of electronic full-text journals (p. 5)
- ❒ R2 Number of electronic reference sources (p. 7)
- ❒ R3 Number of electronic books (p. 8)

Use of Networked Resources and Services

- ❒ U1 Number of electronic reference transactions (p. 11)
- ❒ U2 Number of logins (sessions) to electronic databases (p. 13)
- ❒ U3 Number of queries (searches) in electronic databases (p. 14)
- ❒ U4 Items requested in electronic database (p. 15)
- ❒ U5 Virtual visits to library's website and catalog (p. 16)

Expenditures for Networked Resources and Related Infrastructure

- ❒ C1 Cost of electronic full-text journals (p. 20)
- ❒ C2 Cost of electronic reference sources (p. 21)
- ❒ C3 Cost of electronic books (p. 22)
- ❒ C4 Library expenditures for bibliographic utilities, networks, and consortia (p. 24)
- ❒ C5 External expenditures for bibliographic utilities, networks, and consortia (p. 25)

Library Digitization Activities

- ❒ D1 Size of library digital collection (p. 27)
- ❒ D2 Use of library digital collection (p. 29)
- ❒ D3 Cost of digital collection construction and management (p. 30)

Performance Measures

Performance Measures

- ❒ P1 Percentage of electronic reference transactions of total reference (p. 33)
- ❒ P2 Percentage of virtual library visits of all library visits (p. 34)
- ❒ P3 Percentage of electronic books to all monographs (p. 35)

Criteria for Performance Statistics and Measures

The data collection procedures for the statistics and performance measures are defined and described according to the following criteria:

Definition: Describes each statistic or performance measure.

Rationale: Discusses why the suggested statistic or performance measure is needed and/or how it can be useful to describe electronic resources and services.

Implementation: Provides instructions for implementing the identified statistic or performance measure, categorized by collector, frequency, procedures, and special considerations, if any.

Collected by: Identifies who is responsible for collecting data; *local* refers to the individual library and *vendors* refers to the content providers with whom the library has contracted to provide electronic resources.

Frequency: Identifies how often the statistic/measure needs to be collected.

Procedures: Outlines the manner in which the data for a statistic or performance measure may be collected. Also includes recommendations for forms.

Special considerations: Identifies special factors that need to be considered during data collection or interpretation.

Related issues: Discusses issues that go beyond the suggested data collection procedures, such as the availability of complementary statistics, ways in which statistics can be combined with other statistics, and other possible approaches to data collection.

Data Collection Procedures for Performance Statistics and Measures

Statistics Related to Patron Accessible Resources

The statistics developed for patron accessible resources account for networked resources and services. The current ARL membership criteria index lacks separate measures for electronic and networked monographs, serials, and bibliographic utilities. Though these electronic and networked resources may limit the amount of print materials acquired and may cost more than their print counterparts, they do constitute more widely available resources.

In the electronic and networked realm, the more a library has, the more materials are provided to customers anytime and anywhere. Although local needs and available resource allocations may differ from library to library, the resource statistics allow academic research libraries to see and to demonstrate to others the changing nature of library collections over the years. In turn, the libraries are expected to use them to make decisions about resource allocations (budget, staff, time, etc.) and to undertake strategic planning accordingly. Furthermore, the picture of available resources provides libraries with an opportunity to offer valued services. However, because the evolving nature of these statistics will rely heavily on technological enhancements, all libraries are encouraged to use extra caution while serving their institutional goals, missions, and visions.

- ❒ R1 Number of electronic full-text journals
- ❒ R2 Number of electronic reference sources
- ❒ R3 Number of electronic books

Patron Accessible Electronic Resources

R1 Number of Electronic Full-Text Journals

Definition: Number of electronic full-text journal subscriptions that the library provides to users either through an individual institutional licensing contract with the provider of journals or through other arrangements (e.g., regional or state consortium) for which the library pays a reduced or no fee for access.

The full-text journals should provide both search and browse capabilities by title and issue. This is different from journal article databases, such as Expanded Academic ASAP in INFOTRAC, that do not provide browsing capability.

This includes electronic full-text journals offered by established scholarly journal publishing houses (e.g., Elsevier's ScienceDirect and Academic Press's IDEAL), scholarly societies (e.g., American Chemical Society journals and American Institute of Physics Online), and services which aggregate content from smaller publishers or from those publishers that prefer to use an external delivery platform (Highwire, OCLC ECO, and EbscoOnline). This should exclude general-purpose periodicals such as magazines and newspapers.

Rationale: Electronic access has expanded dramatically to provide a range of useful resources for library users. This statistic helps document the degree of expansion of electronic resource availability in the individual library and can be used to justify continuation and enhancement of these services.

Research libraries act increasingly as gateways to a vast array of external information. This measure specifically addresses the extensiveness of scholarly content a library provides to its user community. In many cases, electronic access enables the library to offer larger selections of journals than it could provide in paper format. This statistic can also be used for library promotion and internal and external reporting. Particularly, this statistic aims at showing the changing nature of traditional scholarly resources with improved and better access anytime and anywhere.

Implementation

- Collected by: Local and vendors
- Frequency: Reported annually, although internal reporting may be more frequent (e.g., monthly, quarterly)
- Procedures: It is impossible to obtain the complete list of electronic full-text journals from a single source. Possible sources for the information include library catalog records (those records that point to web addresses), library web pages that list the journal titles, the internal electronic resource management database, and vendor records (websites and contract documentation).
    1. Create a master list of full-text electronic journals from all the sources available. Use a spreadsheet or database program to organize and maintain the list.
    2. Remove titles that do not meet the above-mentioned definition but keep duplicate titles resulting from multiple subscriptions (e.g., main library and medical or law libraries).
    3. Record the counts and be sure they are updated regularly. The library should also update the count information on the library website and/or in marketing brochures on a regular basis.

Special considerations: It is time-consuming to establish procedures to collect this statistic for the first time. However, once that is done, it will be relatively easy to update the information. (This applies to other statistics and measures included in the manual as well.)

Include journal titles that come with print subscriptions or print plus online subscriptions since the focus of the statistic has to do with how many scholarly electronic journal titles users can access. Do not include free government publications and free electronic journals to which the library provides links.

Free government publications and free electronic journals are a valuable resource for many libraries. How to collect statistics relating to these resources will be addressed in the future.

R2 Number of Electronic Reference Sources

Definition: Number of electronic reference sources and aggregation services that the library provides to users either through an individual licensing contract with the content providers or through other arrangements (e.g., regional or state consortium) for which the library pays a reduced or no fee for access.

This includes citation indexes and abstracts; full-text reference sources (e.g. encyclopedias, almanacs, biographical and statistical sources, and other quick fact-finding sources); full-text journal and periodical article collection services (e.g., EBSCOhost, ProQuest, Academic Universe, and INFOTRAC OneFile); dissertation and conference proceedings databases; and general-purpose magazines and newspapers. Licensed electronic resources also include those databases that institutions mount locally

Rationale: Networking technology in libraries has improved and increased dramatically user access to a range of useful reference resources. This statistic documents the degree of expansion of electronic resource availability and can be used to justify continuation and enhancement of these services. In the 1990s, because of the increasing popularity of the Internet, the ways reference interviews were held and reference sources were used changed. Today, users have electronic formats as well as traditional reference sources to provide answers to their reference questions.

Research libraries traditionally act as gateways to a vast array of external information. This measure deals with the extensiveness of scholarly content the library provides to the user community and the availability of reference sources on an anytime/anywhere basis. In many cases, electronic access enables the library to offer more resources than it could in paper format. This statistic can also be used for library promotion and internal and external reporting. Specifically, this statistic aims at showing the changing nature of traditional scholarly resources with improved access.

Implementation

- Collected by: Local and vendors
- Frequency: Reported annually, although internal reporting may be more frequent (e.g., monthly, quarterly)
- Procedures: As in the case of the number of electronic full-text journals, it is impossible to obtain the complete list of databases from a single source. Possible sources for the information include library catalog records (those records that point to web addresses), library web pages that list the database titles, the internal electronic resource management database, and vendor records (websites and contract documentation).

1. Create a master list of electronic databases from all the sources available. Use a spreadsheet or database program to organize and maintain the list.
2. Remove titles that do not meet the above-mentioned definition but keep duplicate titles resulting from multiple subscriptions (e.g., main library and medical or law libraries).
3. Record the counts and be sure they are updated regularly. The library should also update the count information on the library website and/or in marketing brochures on a regular basis.

Special considerations: The unit of measurement here is the database not the whole service provided by a vendor. For example, if the library subscribes to OVID and the company provides five databases (ABI/Inform, Books in Print, CINAHL, INSPEC, and PsycINFO), then the count is 5, not 1. By the same token, if the library subscribes to three database packages (Academic Universe, Congressional Universe, and Statistical Universe) from Lexis-Nexis, the count is 3.

This count should not include freely available databases to which the library provides links or library-created finding aids.

Freely available databases and library-created finding aids are a valuable resource for many libraries. How to collect statistics relating to these resources will be addressed in the future.

R3 Number of Electronic Books

Definition: Number of electronic full-text monographs that the library offers to its users either through an individual licensing contract with the content providers or through other arrangements (e.g., regional or state consortium) where the library pays a reduced or no fee for access.

This includes electronic books purchased through vendors, such as netLibrary and Books24x7, and electronic books that come as part of aggregate services. It excludes internally digitized electronic books, electronic theses and dissertations, digitally created archival collections (e.g., Early English Books Online), and other special collections. This also excludes publicly available electronic books to which the library provides web links. It does not include machine-readable books distributed on CD-ROM, or accompanied by print books.

Rationale: Networking technology in libraries has improved and increased dramatically user access to the electronic counterparts of some traditional sources. This statistic documents the degree of expansion of e-books. In the mid 90s, networking and resource sharing technologies provided libraries with print books and e-books that were made available through a library's networks.

Because the evolving nature of this statistic will heavily depend on technological enhancements, all libraries are encouraged to use extra caution while pursuing their institutional goals, missions, and visions. Moreover, the definition of e-books is still evolving. This statistic is an early attempt to keep track of this type of resource as it becomes more widely available.

Implementation

- ❒ Collected by: Local and vendors
- ❒ Frequency: Reported annually, although internal reporting may be more frequent (e.g., monthly, quarterly)
- ❒ Procedures:

1. For each electronic book collection, get the electronic title counts from either the providers or catalog records. Unlike electronic full-text journals and reference databases, it is not necessary to list the titles for each electronic book collection.
2. Count any duplicate titles resulting from multiple subscriptions (e.g., main library and medical or law libraries).
3. Record the counts and be sure they are updated regularly. The library should also update the count information on the library website and/or in marketing brochures on a regular basis.

Special considerations: Do not include book collections that are a part of aggregate services and function more as a reference collection (e.g., MD Consult reference books, ProQuest's Early English Books Online, and books@OVID). They should be reported in the electronic reference databases.

Do not include freely available electronic books such as titles available from the National Academy Press.

Related issues: Electronic books, still evolving in terms of technology and adoption for use, present a number of issues in terms of definition and measurement, such as "location," accessibility (metadata and access points), and use versus circulation (e.g., is online use for 20 minutes a circulation, as it would be with reserve materials, or does a circulation of electronic books require a minimum period of use, such as 24 hours?).

- ❒ What about reference book collections provided by vendors? Should they be treated as electronic books, for example, or should they be treated as a database, on the grounds that they are used as databases?

Count only those books that a user can check out, as they would traditional books. Unlike traditional books that the library purchases and owns, electronic books can be subscribed to for an ongoing fee. In this case, the library accounting system may treat these as serials rather than books because of the type of payment. It is relatively easy to keep track of the number of electronic books right now since most libraries deal with only a handful of e-book vendors, such as netLibrary and Books24x7. But in the future, it will become increasingly difficult to do this as the sources of electronic books proliferate.

Finally, some provisions of contractual agreements between libraries and vendors may limit the level of use of e-books. These issues need be addressed in future research.

Use of Electronic Networked Resources and Services

High use of a library resource or service implies a collection development program that is working to create access to the resources customers need. Use and the need can also identify resources and services that are seen as particularly valuable in the education and research enterprise and should be expanded, or perhaps resources and services that should be discontinued due to lack of use and interest. Whether provided by vendors or collected institutionally, usage statistics can help a library administrator make decisions and plan for the future in order to meet not only users' expectations and needs but also institutional goals. The reported data can also provide other information as to where and when people use the library's materials and how well the library serves its target audience and anticipates their potential needs.

The cost of providing access to networked resources and services can be more expensive than that of traditional counterparts. Depending heavily on earlier ICOLC guidelines, the E-Metrics use measures put this in the perspective of the changing academic research library environment. The purpose of the use measures is to provide statistics relating to the use of networked services and resources. Therefore, it is expected that library administrators can reconsider some resource allocation issues as the number of resources and services tend to increase while people are provided greater access. Please note that, as with most of the statistics in this study, statistics related to the use of library resources and services should be revisited and perhaps modified as the technology advances.

- ❒ U1 Number of electronic reference transactions
- ❒ U2 Number of logins (sessions) to electronic databases
- ❒ U3 Number of queries (searches) in electronic databases
- ❒ U4 Items requested in electronic database
- ❒ U5 Virtual visits to library's website and catalog

Use of Networked Resources and Services

U1 Number of electronic reference transactions

Definition: Number of electronic reference transactions conducted via email, a library's website, or other network communications mechanisms designed to support electronic reference. An electronic reference transaction *must* include a question *either* received electronically (e.g., via e-mail, WWW form, etc.) *or* responded to electronically. Those transactions that are both received and

responded to electronically are counted as *one* transaction. This count excludes phone and fax traffic unless either the question or answer transaction occurs via the described manner. It includes the counts accrued from participation in any local and national projects, such as DigiRef and the Library of Congress's CDRS (Collaborative Digital Reference Service).

A reference transaction is an information contact, which involves the knowledge, use, recommendations, interpretation, or instruction in the use of one or more information sources by a member of the library staff.

Rationale: Libraries are making more of their services available electronically and are interested in tracking the development of a new and emerging library service. There is a need to better document this transition to facilitate and improve resource allocation activities. This statistic represents reference activities conducted electronically in the library. It is an attempt to measure reference transactions through new electronic tools.

Implementation

- Collected by: Local
- Frequency: Reported annually, although internal reporting may be more frequent (monthly, quarterly). This statistic can be collected in the same manner as the library gathers other reference transactions data.
- Procedures:

1. Select a typical week (or month) to run a sample study. Be sure to vary the specific week (or month) chosen over the course of a year or from year to year to account for seasonal fluctuations.
2. Key tasks include distributing a daily tally sheet, collecting the daily tally sheet, adding each day's totals to a weekly figure, and being available to respond to data collection problems should they occur.
3. Transactions may be via e-mail, a form on a web page, etc. Electronic reference transactions may involve more than reference desk staff (e.g., web master, various reference personnel, library director, volunteers, etc.). Establish an administrative procedure to report electronic reference transaction counts to a designated staff person, no matter who receives the questions or answers the reference requests.
4. Disseminate the new procedure and rationale. Several notices throughout the year may be necessary.
5. Report an electronic reference transaction as you would a face-to-face reference transaction. Thus, one e-mail request may contain several reference questions taking varying times to complete. For example, one e-mail request could contain two relatively short reference questions and one reference question that took 10-15 minutes to answer. Count the number of requests, not the number of questions. Thus, in the example you would report one (1) as the number of electronic reference transactions even though there were three questions. Report counts using pre-established local library reporting periods (weekly, monthly, etc.).
6. Indicate and describe any additional methods used outside of this definition and guidelines.

Special considerations: Unless the library uses electronic reference management software to collect and report transaction data, it is difficult to keep track of a complete reference transaction cycle (query and response) because of time-delays and the involvement of several parties.

As stated in the definition, the statistic includes the number of service transactions provided to patrons outside the university or the parent institution that the library serves, through regional or national cooperative efforts and through library policies.

Related issues: Reference services are undergoing rapid changes. Libraries are experimenting with different modes of electronic reference. One could say that simple email transactions that are prominently mentioned in the procedures are not much different from traditional reference services. How can a library measure quality in providing different types of electronic reference services such as live-chat with text/voice/video? Will this measure help the library determine user demand and thereby plan for resource allocation? To answer these questions, libraries need to collect more detailed information such as length of time taken to answer questions, types of questions by types of transactions, and so on. Also, this statistic is likely to produce some useful figures and trends regarding staff support and allocation in reference activities.

U2 NUMBER OF LOGINS (SESSIONS) TO ELECTRONIC DATABASES

Definition: Number of user initiated sessions in licensed electronic resources. A session or login is one cycle of user activities that typically starts when a user connects to a database and ends with explicit termination of activities (by leaving the database through logout or exit) or implicit termination (time out due to user inactivity). Licensed electronic resources also include those databases that institutions mount locally.

Rationale: One purpose of having a networked environment is to promote connectedness and accessibility to a variety of information resources, hence the need for this measure. Also, the gradual shift in the materials expenditures from traditional print-based resources to electronic databases can be understood with the measure. This measure will produce a count of how often specific databases are used and complement traditional physical attendance counts.

Implementation: Until there is a standardized report generation system that captures different statistics from different content providers, we recommend that each library develop an in-house spreadsheet or database to capture monthly usage statistics of licensed databases. At least on the database title level, usage statistics should be collected from vendors, entered into the in-house databank, and maintained for reporting and analysis.

- Collected by: Vendor
- Frequency: Monthly, but can be reported quarterly or annually
- Procedures:

1. Process monthly usage statistics from vendors and copy or import the number of attempted sessions in each database (in each journal collection for full-text journals) to an in-house spreadsheet or database file.
2. Calculate the total sessions for a given month by adding the number of sessions from each database or journal collection.

Special considerations: Not all vendors report this statistic. Therefore, it will be necessary to qualify the statistic with a sentence such as this: "We have 150,000 logins recorded from 120 databases out of 200 subscribing. We cannot report this statistic for the remaining 80 databases because the vendor does not supply login (session) information to customers."

Related issues: When analyzing the login counts, it might be important to explain any increases or decreases in the figures. Specify, for example, whether the increase comes from (1) the addition of new databases, (2) databases which did not report the statistic in the past but have now begun reporting, (3) increased demand, and/or (4) an increase in the number of simultaneous users.

Problems with the comparability of login counts from different vendors is a serious threat to the utility of the combined count. Content providers use different time-out thresholds (ranging from 7 to 30 minutes on average). Also, because of the IP-based authentication, several sessions conducted at the same public workstation can be counted as a single login. Alternatively, libraries can collect attempted logins to various licensed databases by making users go through a central gateway (which counts all attempted logins). This will ensure that one login attempt to a database is the same as a login to other databases. However, what this data collection method misses is user logins that go directly to content provider sites. It is unclear how many user logins fall into this category, but the phenomenon certainly results in a substantial undercount of user logins.

While the gross login figure is useful, it is useful only for trend plotting and gross justification of electronic resources. Within the library, the usage measures of licensed electronic resources have many users and uses. Circulation of usage statistics on the database title level (or in an extreme case on the journal title level) and discussion of any noticeable changes (or lack thereof) need to occur at various levels among the concerned parties, including collection development personnel, web master(s), technical services staff, and so on.

U3 Number of queries (searches) in Electronic Databases

Definition: Number of user initiated queries (searches) in licensed electronic resources. A search is intended to represent a unique intellectual inquiry. Typically, a search is recorded each time a search request is sent/submitted to the server.

Rationale: This statistic provides libraries with an indication of the databases that are most heavily used, areas of user interest, database popularity, and a level of usage detail that goes beyond an initial session. It also can provide

important information for billing purposes, as some vendors charge for database usage by number of searches. This statistic can complement U1, the number of electronic reference transactions, as more user requests bypass staff mediations. Some portion of this statistic is also analogous to in-library use of reference sources.

Implementation

- ❒ Collected by: Vendor
- ❒ Frequency: Monthly, but can be reported quarterly or annually
- ❒ Procedures: Until there is a standardized report generation system that captures different statistics from different content providers, we recommend that each library develop an in-house spreadsheet or database to capture monthly usage statistics of licensed databases. Usage statistics need to be collected from vendors, entered into the in-house databank, and maintained for reporting and analysis.
    1. Process monthly usage statistics from vendors and copy or import the number of attempted searches in each database to an in-house spreadsheet or database file.
    2. Calculate the total number of searches for a given month by adding the number of searches from each database or journal collection.

Special considerations: Because some vendors do not report this statistic, it will be necessary to qualify the statistic with a sentence such as this: "We have 150,000 searches recorded from 120 databases out of 200 subscribing. The other 80 do not provide this statistic."

Related issues: Different assumptions about and mechanisms for collecting search counts by different vendors are potential threats to the combined count.

ITEMS REQUESTED IN ELECTRONIC DATABASES

Definition: Number of items requested in all of the library's licensed electronic resources. These resources may include journal articles, e-books, reference materials, and non-textual resources that are provided to the library's users through licensing and contractual agreements. The user requests may include viewing, downloading, emailing, and printing to the extent the activity can be recorded and controlled by the server rather than browser.

The items reported depend on the type of content. Examples include citations, abstracts, tables of contents, and full-text articles (ASCII, HTML, PDF, or PS).

Rationale: This statistic provides a circulation count for electronic contents in a way analogous to the traditional circulation of books. Given the fact that libraries do not have good measurements of in-house materials usage, particularly serials usage, this statistic helps libraries understand in-library use patterns that were heretofore difficult to measure.

Use of Electronic Networked Resources and Services

Implementation

- Collected by: Vendor
- Frequency: Monthly, but can be reported quarterly or annually
- Procedures: Until there is a standardized report generation system that captures different statistics from different content providers, we recommend that each library develop an in-house spreadsheet or database to capture monthly usage statistics of licensed databases. Usage statistics should be collected from vendors, entered into the in-house databank, and maintained for reporting and analysis.
    1. Process monthly usage statistics from vendors and copy or import the number of items selected for viewing, downloading, and emailing in each database. Count the number and type of items users selected: abstracts, citations, and full-texts.
    2. Calculate the total number of items for a given month by adding the number of items requested from each database or journal collection.

Special considerations: Because some vendors do not report this statistic, it will be necessary to qualify the statistic with a sentence such as this: "More than 150,000 items were requested from 120 databases out of 200 subscribing. The other 80 do not provide this statistic. Among the requested items, 100,000 were some form of full-text records."

Related issues: Different vendors apply different assumptions and mechanisms in collecting items requested counts. This lack of standardization makes it difficult to calculate an aggregate count.

We do not have good measurement of in-house materials usage, particularly journal usage. However, electronic journals and databases allow libraries to find out how often materials are requested. Having in-house usage figures is important for understanding the dynamics of usage between print and electronic journals, so that we can ascertain any correlation between them.

VIRTUAL VISITS TO LIBRARY'S WEBSITE AND CATALOG

Definition: This is defined as user visits to the library's website or catalog from outside the physical library premises regardless of the number of pages or elements viewed. If a user looks at 16 pages and 54 graphic images while at a website, that user registers one visit on the web server. All visits to the website should be counted regardless of repetition by one user. A visit is usually determined by a user's IP address, which can be misleading due to Internet Service Providers (ISPs) and Firewalls or Proxy Servers. Thus, this measure is actually an estimate of the visits.

Rationale: Use of the website or catalog from outside the library reflects interest in library services. The role of networked services is to expand the reach of libraries beyond their physical boundaries. This statistic helps describe the significance of networked services use by measuring the number of virtual

accesses. This will also give an opportunity for the library to compare the demand placed on their networked resources with that for other popular information-oriented websites (such as Excite, Lycos, etc.).

Implementation:

- ❒ Collected by: Local
- ❒ Frequency: Reported annually, although internal reporting will be more frequent (e.g., weekly, monthly, and quarterly).
- ❒ Procedures:

1. Identify all sources of virtual visits to the library. This may involve activities that take place on more than one web server. Some of the web servers may be owned by the library and some may be owned or maintained by another department in the university, an Internet Service Provider (ISP), or other library vendors (e.g., library OPAC provider).
2. Exclude internal use within the premises of the library from the counts for this measure when possible. Two common approaches are using IP addresses or some form of authentication tagged to each transaction. In terms of external visits to the library, three common sources are: external access to the library's web page, remote logins (sessions) to non-web-based library databases, and remotely accessible library OPAC.
3. Develop strategies for collecting the data from each of these sources of virtual visits. Different software may be needed to measure each electronic source of virtual visits. In some cases, the library may calculate the virtual visits using one or more log analysis software packages. In other cases, the external owner of the web server or service (the ISP) must provide the data. Discussions may need to be held with these service providers to obtain the needed data. In still other cases, custom programs may have to be developed.
4. In the case of library web pages housed on the library server, identify, configure, and install appropriate log analysis software. Determine log analysis software definition that corresponds to the virtual visit definition.

   Note: Different log analysis software pa kages may count virtual visits in different ways, so the count obtained will by necessity be an estimate. Arrange with the server technical staff for regular (monthly) reporting of internal visits at the various user access Internet workstations, external library user virtual visits, and total virtual visits (internal visits plus external visits). Run the log analysis software.
5. In the case of library web pages housed on an ISP's server, identify the log analysis software the ISP uses. Determine the definition of "visit" used by the log analysis software that corresponds to the virtual visit definition with the assistance of the ISP. Arrange with the ISP for regular (monthly) reporting of internal library visits at the various user access Internet workstations, external library user virtual visits, and total virtual visits (internal visits plus external visits).
6. Where virtual visit counts include the aggregate of internal and external visits, indicate this in your report.

Special considerations: Count all visits to the website regardless of repetition by one user as long as each visit meets the criteria for this statistic.

After one user connects to the Internet, several users could conduct multiple different searches in the electronic service. In some cases, e.g., Internet-accessible OPAC use inside the library, several users, one after the other, might make use of the same established connection. In most systems, a connection is cut off after a specified period of non-use, thus solving part of the problem. The best existing method of collecting virtual visits is to use log analysis software. The log analysis software producers may define virtual visits differently. For example, does a visit end after a time-out period of 30 minutes, 15 minutes, or some other time? The recommended time-out period is 30 minutes, but a local library may have to accept the available log analysis software's definition even if it varies from the above.

Some libraries will find it difficult to report every virtual visit. For example, libraries may have difficulty counting the use of library OPACS because their vendors do not provide this information. Make a record of those sources of virtual visits not counted. Do not estimate virtual visits for which data are not available.

Related issues: This measurement requires a relatively high degree of technical skills either on staff or available from the library's website host.

Expenditures for Electronic Resources and Related Infrastructure

This portion of the statistics is based on the *ARL Supplementary Statistics* Survey (the most recent survey instruction available at http://www.arl.org/stats/arlstat/#sup). In collecting the statistics, the library should refer to the procedures followed and the amounts reported in response to the *ARL Supplementary Statistics* Survey.

These statistics were developed by ARL to determine expenditure patterns on electronic and networked resources and the effect of new types of library resources and services, those delivered both individually and collectively with other institutions, on library expenditures. These measures are expected to help ARL libraries justify their growing budgets due to the great expense of electronic and networked services. These measures can help answer such questions as: How much are research libraries spending for electronic resources collectively and how much on average? How do expenditures for electronic resources compare across several research libraries?

We have not included the cost of the technical staff and their training, the networking and equipment to provide access to the electronic resources as well as the time of all the staff involved. This will have to be addressed in the future.

General Introduction to C1-C3

The report should include expenditures for electronic indexes and reference tools, electronic full-text periodical collections and electronic journal back-files, and online searches of remote databases – whether accessed remotely or installed locally from CD-ROM, magnetic tapes, etc. The report should also include expenditures for materials purchased jointly with other institutions if such expenditures can be separated from other charges for joint services, fees paid to bibliographic utilities if the portion paid for computer files and search services can be separately counted, and equipment costs when they are inseparably bundled into the price of the information product.

Expenditures for bibliographic utilities, networks, and consortia that are unrelated to end-user database access should be reported in C4, not in C1 through C3.

Expenditures for Networked Resources and Related Infrastructure

- ❒ C1 Cost of electronic full-text journals
- ❒ C2 Cost of electronic reference sources
- ❒ C3 Cost of electronic books
- ❒ C4 Library expenditures for bibliographic utilities, networks, and consortia
- ❒ C5 External expenditures for bibliographic utilities, networks, and consortia

C1 Cost of electronic full-text journals

Definition: Expenditures for electronic full-text journal subscriptions that the library provides to its users. Include both initial purchase cost, membership fees (such as JSTOR) as well as annual access and service fees paid directly or through consortia arrangements.

Rationale: This statistic, cost of electronic full-text journals, was developed by ARL to find out how much libraries are spending on electronic full-text journals and how new forms of electronic journals are replacing traditional journals and scholarly publications. It also indicates the extent of budget allocations for electronic resources. Furthermore, this statistic allows libraries to calculate unit costs of e-journals after collecting C1 and R1 statistics, and thus aids libraries in deciding how effectively they are serving their potential and intended audiences, and in benchmarking with the other institutions.

Implementation

- ❒ Collected by: Local
- ❒ Frequency: Reported annually, although internal reporting may be more frequent (e.g., monthly, quarterly)
- ❒ Procedures: For the definition of electronic full-text journals, please refer to the definition of R1. Current library accounting systems do not support coding of materials expenditures by the categories used in the manual. Therefore, it may become necessary to create an in-house spreadsheet or database file to keep track of cost information according to the types of resources (e-journals, reference databases, and e-books). Preferably a single file will contain contract information (duration, cost), updated title counts, and reported usage statistics. Significant coordination is required for setting up the structure of the file, but in the long run may streamline many aspects of the management of electronic licensed materials.
  1. Gather reports and invoices related to electronic databases and resources for the reporting period. These documents are typically handled by the library's accounting office.
  2. If you have not done so, organize the data using the sample worksheet in Appendix B, Figure B.1.

BEST COPY AVAILABLE

3. Even if a licensing contract or consortium arrangement period is different from the reporting period, use the annual licensing fee to calculate the statistics.
4. If a fee is paid to a consortium or other joint arrangement, include the amount. In the case where a fee is paid for an aggregate service and the service contains different categories of resources (full-text journals and reference sources) as a bundle, use an estimate based on expected or historical use, or list prices.
5. Note any major commitments (such as JSTOR one-time costs) that do not occur year to year and that significantly influence the reported amount.

Special considerations: Whereas the patron accessible resource counts reflect the extensiveness of electronic resources at *a given point in time* (most likely at the end of the reporting period, be it a month or a year), the cost figures cover *a period of time*. Ideally the amount of money spent reflects the number and extensiveness of resources. Prorating licensing fees addresses part of the problem of matching the resources with the money spent, but can be very time consuming. You can report the annual amount paid without prorating on the basis that over the years the figures will even out.

Some electronic full-text journals come either as a free service with a print subscription or as part of a print-plus-online-access subscription (the library pays extra for electronic access). In the first case, the problem is whether or not to post any amount for the cost of electronic access. In the latter case, the question is how much of the cost can be attributed to electronic access.

C2 Cost of electronic reference sources

Definition: Expenditures for electronic reference sources and aggregate services that the library provides to users either through individual licensing contracts with content providers or through consortia or other arrangements where the library pays some fees. These fees include both annual access fees and other service costs paid to the vendor directly or through consortial arrangements.

Rationale: This statistic, cost of electronic reference sources, was developed by ARL to determine how much libraries are spending on electronic reference sources and how new forms of electronic reference sources are replacing traditional reference materials. It also gives insight into shifts in budget allocations from print to electronic materials, or new allocations exclusively for electronic materials. Furthermore, this statistic allows libraries to calculate unit costs of electronic reference sources after collecting C2 and R2 figures. This figure assists libraries in making decisions about how effectively they are serving their potential and intended audience, and in benchmarking with other institutions.

Implementation

- Collected by: Local
- Frequency: Reported annually, although internal reporting may be more frequent (e.g., monthly, quarterly)

❒ Procedures: For the definition of electronic reference sources, please refer to the definition of R2. For libraries that do not have acquisitions systems which support coding of materials expenditures by the categories used in the manual, it may be necessary to create an in-house spreadsheet or database file to keep track of cost information according to the types of resources (e-journals, reference databases, and e-books). Preferably a single file will contain contract information (duration, cost), updated title counts, and reported usage statistics.

1. Gather reports and invoices related to electronic databases and resources for the reporting period. These documents are typically handled by the library's accounting office.
2. If you have not done so, organize the data using the sample worksheet in Appendix B, Figure B.1.
3. Even if a licensing contract or consortium arrangement period is different from the reporting period, use the annual licensing fee to calculate the statistics.
4. If a fee is paid to a consortium or through other joint arrangement, include the amount. If a fee is paid for an aggregate service and the service contains different categories of resources (full-text journals and reference sources) as a bundle, use an estimate based on expected or historical use, or list prices.
5. In the comments field of the sample worksheet (Appendix B, Figure B.1), report any major commitments that do not occur year to year and that significantly influence the reported amount.

Special considerations: Whereas the patron accessible resource counts reflect the extensiveness of electronic resources *at a given point in time* (most likely at the end of reporting period, be it a month or a year), the cost figures cover *a period of time*. Ideally the amount of money spent reflects the number and extensiveness of resources. Prorating licensing fees addresses part of the problem of matching the resources with the money spent, but can be very time consuming. You can report the annual amount paid without prorating on the basis that over the years the figures will even out.

C3 Cost of Electronic Books

Definition: Expenditures for electronic full-text monographs that the library offers to its users. Include both initial purchase costs and membership fees as well as annual access and service fees paid directly or through consortia arrangements.

Rationale: This statistic, cost of electronic books, was developed by ARL to determine how much libraries were spending on electronic books. It also gives an idea about the extent of budget allocations for electronic resources. Furthermore, this statistic allows libraries to calculate unit costs of e-books after collecting C3 and R3 statistics, aids them in determining how effectively they are serving their potential and intended audiences, and assists them in benchmarking with other institutions.

Implementation

- Collected by: Local
- Frequency: Reported annually, although internal reporting may be more frequent (monthly, quarterly)
- Procedures: For the definition of electronic books, please refer to the definition of R3. Current library accounting systems generally do not support coding of materials expenditure by the categories used in the manual. Therefore, it may become necessary to create an in-house spreadsheet or database file to keep track of cost information according to the types of resources (e-journals, reference databases, and e-books). Preferably a single file will contain contract information (duration, cost), updated title counts, and reported usage statistics.
  1. Gather reports and invoices related to electronic databases and resources for the reporting period. These documents are typically handled by the library's accounting office. You may also need to review circulation records to verify the accuracy of invoices if additional per-use fees are paid (royalty on use, as with E-reserves).
  2. If you have not done so, organize the data using the sample worksheet in Appendix B, Figure B.1.
  3. Even if a licensing contract or consortium arrangement period is different from the reporting period, use the annual licensing fee to calculate the statistics.
  4. If a fee is paid to a consortium or other joint arrangement, include the amount.
  5. Note any major commitments (such as netLibrary purchase costs) that do not occur year to year and that significantly influence the reported amount.

Special considerations: Whereas the patron accessible resource counts reflect the extensiveness of electronic resources at *a given point in time* (most likely at the end of the reporting period, be it a month or a year), the cost figures cover *a period of time*. Ideally the amount of money spent reflects the number and extensiveness of resources. Prorating licensing fees addresses part of the problem of matching the resources with the money spent, but it can be very time consuming. You can report the annual amount paid without prorating with the rationale that over the years the figures will even out.

Traditionally books are purchased on a one-time payment in exchange for permanent ownership by the library. However, with regard to electronic books, it appears that some arrangements allow libraries to subscribe to an e-book collection at a predetermined fee and for a predetermined interval of time. We are concerned with the format of the material, not the subscription or payment arrangement. These materials should be counted as books, not serial publications.

Related issues: In many instances, the physical form of the material (print, electronic) may change the nature of the object. An electronic book is a good example. With enhancements such as full-text searching (although print books too have some search capability through tables of contents and indexes), electronic books support new forms of searching not present in print.

C4 LIBRARY EXPENDITURES FOR BIBLIOGRAPHIC UTILITIES, NETWORKS AND CONSORTIA

Definition: Expenditures paid by the library for services provided by national, regional, and local bibliographic utilities, networks, and consortia such as OCLC, RLG, *excluding fees paid for user database access and subscriptions*, which should be reported in C1 through C3.

Rationale: This statistic is based on the *ARL Supplementary Statistics* Survey. It was developed by ARL to determine how much money libraries spend for bibliographic utilities, networks, and consortia. Because individual libraries often have to deal with special provisions and funding issues related to contracts, this statistic may not lend itself to comparability among ARL member libraries. Nevertheless, it represents an attempt to keep track of the financial relationships between bibliographic utilities and libraries. Although this may provide very limited comparability, it is an estimate of the cost of bibliographic utilities, networks, and consortia.

Implementation

- ❒ Collected by: Local
- ❒ Frequency: Reported annually, although internal reporting may be more frequent (e.g., monthly, quarterly)
- ❒ Procedures:

1. Gather reports and invoices with bibliographic utilities, networks, and consortia of which the library is a member for the whole or part of the reporting period. These documents are typically handled by the library's accounting office.
2. Identify only those expenditures paid to the bibliographic utilities, networks, and consortia for membership, maintenance, and other infrastructure. Do not include expenditures that are directly attributable to access of electronic resources. Those expenditures should be included in C1 through C3.

   For instance, if your library paid a total of $100,000 to OCLC for its various services and your best guess of electronic database access portion of the services is 80%, then you should report $80,000 for C2 and the remaining $20,000 for C4.
3. Even if a membership or consortium period is different from the reporting period, use the amount of the membership or consortium agreement.
4. Use the sample form in Appendix B, Figure B.2 to compile the expenditures.

Special considerations: Prorating can be time consuming. Consortia or other memberships may bring additional benefits, such as subscriptions, training or preferential pricing for acquisition of materials. It may be difficult to separate pure membership fees from value-added services of membership (e.g.,

original catalog credits from OCLC that may be used to offset costs of databases, purchase of catalog records, etc.). Report the annual amount paid without prorating with the rationale that over the years the figures will even out.

C5 External Expenditures for Bibliographic Utilities, Networks, and Consortia

Definition: Expenditures paid by external agencies, such as state government agencies, on the library's behalf for access to computer files, electronic serials, or search services through a centrally funded system or consortial arrangements. Examples include state- (or province-) supported networks such as VIVA (Virginia), CNSLP (Canadian National Site Licensing Project), and the University of California's California Digital Library Expenditure.

Rationale: Like statistic C4, this statistic is based on the *ARL Supplementary Statistics* Survey. It was developed by ARL to determine how much money is spent for bibliographic utilities, networks, and consortia on libraries' behalf for access to computer files, serials, and/or services through consortial arrangements. Because of contractual issues, this statistic may provide little comparability among ARL member libraries. Nevertheless, it can give ARL members an estimate of the external costs of bibliographic utilities, networks, and consortia.

Implementation

- ❒ Collected by: Local and external bodies such as regional and academic consortia
- ❒ Frequency: Reported annually, although internal reporting may be more frequent (e.g., monthly, quarterly).
- ❒ Procedures:

1. Gather reports and invoices with bibliographic utilities, networks, and consortia that are related to electronic databases and resources for the reporting period. These documents are typically handled by the library's accounting office. However, they can be maintained outside the organization and, in some instances, may only be provided to libraries upon demand.
2. Find out how much of the central funding is attributable to your library. For example, if your library contributes a total of $60,000 over a period of three years to a state consortium that has a matching contribution of $120,000 for the same period, the amount to report as C5 for a given year during the three-year period will be $40,000 ($120,000 x 1/3). The library's contribution ($60,000) has to be divided annually and posted in C1 through C3.

   If the specific dollar amount is not known, but the total student FTE (full-time equivalent) for the consortium and the amount spent for the academic members are known, divide the overall amount spent by your institution's share of the total student FTE. Alternatively, if the consortium is comprised of different types of institutions (academic, public, or corporate),

Electronic Resources and Related Infrastructure

but the library has information about the portion of its own use among the consortium participants, multiply the total amount by the percentage of known (or estimated) usage rate.

3. As a last resort, consult with a staff member overseeing the consortium or the central funding system to get an estimate of the portion of the central funding that is attributable to the library. Please make a note of this in the comments field in the sample worksheet (Appendix B, Figure B.3).
4. Use the sample form in Appendix B Figure B.3 to compile the expenditures.

Electronic Resources and Related Infrastructure

Statistics Related to Library Digitization Activities

Comprised of resource and use measures, the digital collection measures attempt to describe where libraries are in creating and making available local (perhaps unique) content that may not have been previously accessible. Such collections can attract students and faculty to your university and thereby enhance the institution's reputation. As more libraries digitize resources, more users will be able to retrieve those unique resources at anytime and from anywhere. Digital library projects, as well as other network resources and services, also will serve increasing numbers of students taking courses online.

Collecting library digitization measures may provide an opportunity for benchmarking and may encourage libraries to devote more time and allocate more resources to this worthwhile endeavor. It should be noted that these statistics represent a very early attempt to measure digitization of resources; as time passes and the technology advances, some of the definitions and procedures may need to be revisited and modified. During the field-testing it was reported that storing and maintaining digitized resources had been an issue. The unavailability of an appropriate infrastructure in some institutions meant that the project did not include statistics related to library digitization projects.

Libraries archive the scholarly output of their institutions – theses and dissertations – in both paper and digital form. Digital collections also provide new opportunities with faculty to archive research results. These statistics, although preliminary, form a basis for tracking these issues.

- ❒ D1 Size of library digital collection
- ❒ D2 Use of library digital collection
- ❒ D3 Cost of digital collection construction and management

Library Digitization Activities

Size of Library digital collection

Definition: Library digital collection refers to digital materials (texts, images, and audio-visuals) created in or converted from different formats (e.g., paper, microfilm, tapes, etc.) by the library and made available to users electronically. This includes electronic theses and dissertations (ETDs), special collections materials, maps, sound recordings, films, and other digital materials that are not purchased or acquired from outside through individual or consortial licensing agreements. It includes the number of titles and size (in gigabytes) by sub-categories (ETD, visual materials, texts, multimedia), and as an aggregate at the end of the reporting period. It also includes the number of items (titles) added during the reporting period.

BEST COPY AVAILABLE

The types of formats in Appendix B, Figure B.4, refer to original formats rather than the digitized outputs. Examples of visual materials include photos, maps, and postcards. Examples of text include books, journal articles and pamphlets. Examples of multimedia include audio, video, and other interactive materials. However, this statistic does not include any back up copies or mirror sites because items should be counted only once.

Rationale: Collecting library digitization measures may provide an opportunity for benchmarking in terms of file sizes for the resources that have been digitized. Moreover, the statistic can demonstrate that libraries are not merely brokers of external information resources, but also producers of information content and useful finding aids.

This statistic provides information on the extent of digital library projects, the life cycle of such projects, and the "virtual space" requirements of such collections.

Implementation

- Collected by: Local
- Frequency: Reported annually, although internal reporting may be more frequent (e.g., monthly, quarterly)
- Procedures: For cases in which multiple digital formats (derivatives) were produced from an item, count it only once based on the type of item that was digitized. For example, if a 100-page book was digitized in 100 TIFF files, each containing a page, a 100-page PDF file, and 10 PDF files (one PDF file for each of 10 chapters), count it as a single text with 100 pages. If a derivative item was used as the source, do not count the outputs. But in the total size (in gigabytes) include all versions of derivatives.

1. Designate a staff member to coordinate the collection of this statistic. The person should be well aware of library digital collection activities.
2. Identify library staff in charge of various digital library projects and initiatives.
3. It is necessary to conduct an inventory of digital material stock using the sample tally worksheet in Appendix B, Figure B.6 if it has not been done already. If this inventory information is already available, enter it into the worksheet. When the inventory is completed, summarize the information using the sample worksheet in Appendix B, Figure B.4. Add additional categories if necessary.
4. After obtaining the inventory information, ask staff members to keep track of additional output regularly using the sample tally worksheet in Appendix B, Figure B.6.
5. At the end of the reporting period, collect the worksheets and calculate the total production during the reporting period using the worksheet in Appendix B, Figure B.5. Add additional categories if necessary.

Related issues: Realistically, each digital collection is unique in terms of the production process, the way it is intended to be used, its focus, and maintenance. It is important to use appropriate units of measurement to describe the overall size and extensiveness of the whole collection.

Because of the wide variations of the types and features of digital collections constructed at ARL institutions, this statistic may be more useful locally than for comparison across ARL member libraries. Benchmarking may, however, be possible from the data collected to produce some qualitative and quantitative indicators as to the extent of digital library collection activities and different emphases across the ARL membership.

D2 USE OF LIBRARY DIGITAL COLLECTION

Definition: Number of times library digital collection titles and physical files were accessed and the number of searches (queries) conducted (if there is such a capability) during the reporting period.

Rationale: Each digital collection is unique in terms of its focus, production process, and the ways it is intended to be used and maintained. Therefore, because of the wide variations of the types and features of these library collections constructed at different ARL institutions, this statistic needs to be collected and used locally instead of across ARL member libraries. Nevertheless, this statistic has the potential to produce some qualitative and quantitative indicators as to how these collections are being used and serving the intended user community's needs.

Implementation

- Collected by: Local
- Frequency: Reported annually, although internal reporting may be more frequent (e.g., monthly, quarterly)
- Procedures:

1. Designate a staff member to coordinate the collection of this statistic. The person should be well versed in the use of web log software and/or statistics provided by the software. This person will act as a liaison for staff members who are responsible for managing library digital collections. Obtaining the statistic may require some level of programming (e.g., Unix scripting and SQL).
2. Items accessed can be collected in various ways, and depending on your library's environment, your library may need to collect different access statistics.

   Although you are asked to collect both title access and physical file access, if it takes too much time and effort to collect the title access, report the physical file access count only. For example, a book can be digitized and made into 10 PDF files, each containing a chapter, for access. Suppose a user viewed five PDF files out of 10. In this case, you will have five

physical item accesses and one title access. Usually it is easier to have a physical item access count, while it takes custom programming to compute the title access count as most off-the-shelf web traffic software packages do not provide this.

Do not report web page hits. Instead, count how many times the digitized items were accessed (the exact name for item access may vary depending on the type of web traffic analysis software being used in the library).

If a search capability is a feature of a library digital collection, the total number of searches submitted needs to be collected. A search represents an explicit user request for specific information in a database and is expressed usually in the form of word strings. Clicks on web page buttons, such as "Next" and "Previous," do not count as user searches.

You might want to install web traffic analysis software (e.g., WebTrends, Web Tracks) on the library web servers housing library digital collection materials, if the web servers do not have such software already. You might want to consider installing a trial version that gives between 30-180 days of free trial.

Read the description of reported statistics carefully and make sure that the software provides what you want.

3. If continuous collection of use statistics is not possible or desirable, select a typical week (or month) to run a sample study. Be sure to vary the specific week (or month) chosen over the course of a year or from year to year to account for seasonal fluctuations. Extrapolate based on the sample data.
4. At the end of the report period, use the log analysis report to calculate the number of accesses to library digital collection items. Use the sample report in Appendix B, Figure B.7, to organize the information.

Special considerations: To the extent possible, exclude accesses by web search spiders. Also, do not include accesses to auxiliary (or incidental) items that are not part of the library digital collection content (.gif buttons and image maps for navigation). Note the method used and include a description of any filtering done.

Related issues: This statistic needs to be collected and used locally instead of across ARL member libraries because of the wide variations of the types and features of digital collections constructed at ARL institutions.

D3 Cost of Digital Collection Construction and Management

Definition: Annual direct costs (personnel, equipment, software, contracted services and similar items) spent to create digital materials (texts, images, and multimedia) or to convert existing materials into digital form for the purpose of making them electronically available to users. Include expenditures related to digitization, OCR, editorial, creation of markup texts, preparation of metadata for access to digitized materials, data storage, and copyright clearance.

Exclude expenditures for information resources purchased or acquired from outside the institution through individual or consortial licensing agreements.

Rationale: The cost of each digital collection construction may vary significantly, depending on the size of the collection, conditions of the sources before digitizing, available infrastructure, staff allocation, timeline, and administrative support. This statistic should be collected and used locally instead of across ARL member libraries because of the wide variability among these library collections constructed at different ARL institutions. Nevertheless, this statistic has the potential to provide quantitative indicators as to how costly these efforts are, how much resource allocation (i.e., budget allocation, staffing, infrastructure, etc.) is needed, and how well they serve the intended user community's needs (e.g., to account for internal and external costs to construct and manage digital collections at ARL libraries).

Implementation

- Collected by: Local
- Frequency: Reported annually, although internal reporting may be more frequent (e.g., monthly, quarterly)
- Procedures:

1. Designate a staff member to coordinate the collection of this statistic.
2. Direct the designated staff member to contact library staff members who are in charge of digital collection projects. Ask all library staff members involved in any digital collection projects as part of their official responsibilities to fill out the worksheet in Appendix B, Figure B.8, for the reporting period. Ask them to estimate how much of their time was spent on planning, implementing, and managing digital collection projects. This information will be entered in the worksheet as FTE. A further breakdown of activities may be necessary if the library wants to have more detailed information on the distribution of efforts.

   Note that annual salary should not be asked of the staff members filling out the worksheet and should not include fringe benefits. When all the worksheets are collected, the salary information will be obtained from the library accounting or personnel department. Direct staff cost will then be calculated.

   The personnel cost should also include wages paid to non-salaried staff, including student and other hourly workers.
3. Cost of equipment should be amortized. For example, if a $3,000 scanner was purchased at the beginning of the reporting year and has a depreciation period of three years, register $1,000 as the equipment cost. Costs of software should be reflected in full amounts based on the time of the purchase.
4. If a subcontracting period is different from the reporting period, prorate the amount for the reporting period. If the payment is based on percent to completion, include only the amount that belongs to the reporting period.
5. Use the sample worksheet in Appendix B, Figure B.9, to calculate the total cost.

Related issues: This statistic needs to be collected and used locally instead of across ARL member libraries because of the wide variations of the types and features of digital collections constructed at ARL institutions.

Analysis of Suggested Performance Measures

The overall rationale for the performance measures in this study is to provide a means for measuring the proportion of services delivered through traditional channels relative to analogous services delivered through electronic channels. These measures will help document trends in service delivery for the purpose of allocating staff and development resources as well as identify trends for strategic planning of service delivery.

- ❒ P1 Percentage of electronic reference transactions of total reference
- ❒ P2 Percentage of virtual library visits of all library visits
- ❒ P3 Percentage of electronic books to all monographs

Performance Measures

P1 Percentage of Electronic Reference Transactions of Total Reference

Definition: Percentage of annual electronic reference transactions to total reference transactions. An electronic reference transaction *must* include a question *either* received electronically (e.g., via e-mail, WWW form, etc.) *or* responded to electronically. Count excludes phone and fax traffic unless either the question or answer transaction occurs via the described manner. It includes the counts accrued from participation in any local and national projects, such as DigiRef and the Library of Congress's CDRS (Collaborative Digital Reference Service).

Total reference = Traditional reference counts (include face-to-face reference transactions, telephone and fax reference counts) + electronic reference transaction counts.

$$P1 = \frac{U1 \text{ (p. 11)}}{\text{Total reference transactions}} * 100$$

Rationale: The purpose of having a networked environment is to promote connectedness. This measure provides an indication of a changing library environment. While in the traditional library environment reference transactions were handled mainly through non-electronic means, in the current environment

reference transactions can be handled via various electronic means over the Internet. By having this as a measure, libraries are able to track the development of a new and emerging library service and have a number that fully represents reference activities. This measure may indicate how often various electronic applications are used in any given period and also assist decision-makers in reallocating resources. Moreover, this performance measure will give administrators trend data on how network services are being used and this data can then be used for future planning.

Implementation

- Collected by: Local
- Frequency: Reported annually, although internal reporting may be more frequent (monthly, quarterly)
- Procedures:

1. If continuous collection of this statistic is not possible or desirable, select a typical week (or month) to run a sample study. It is recommended that you sample a week in a different month or several months to account for seasonal fluctuations. Extrapolate based on the sample data.
2. Designate a staff member to coordinate the collection of this measure. Key tasks include distributing a daily tally sheet, collecting the daily tally sheet, adding each day's total to a weekly figure, and being available to respond to data collection problems should they arise.
3. For electronic transactions, use the count obtained by following the procedures for U1 (p. 11).
4. Total the overall number of transactions.
5. Divide the number of electronic reference transactions by the total number of transactions.
6. Multiply by 100.
7. Indicate and describe any additional methods used outside of this definition and these guidelines.

Special considerations: Count the number of transactions, not the number of questions. That is, if one request is emailed with three questions, it should be counted as one transaction, not three.

P2 Percentage of Virtual Library Visits of All Library Visits

Definition: Number of virtual library visits out of all library visits.

A *virtual library visit* is when a user visits the library's website or catalog for any length of time or for any purpose from outside the physical plant of the library, regardless of the number of pages or items viewed or requested. The term "virtual visit" excludes in-library visits where a patron or a staff member uses electronic

resources. If a user looked at 16 pages and 54 graphic images while at a website, that user registers one visit on the web server. A visit is usually determined by a user's IP address. Due to various server management issues and differing software, this measure is an estimate of the visits to the library site.

All library visits is the total of the number of virtual library visits plus the number of physical visits to the library including branches.

P2 = $\frac{\text{U5 (p. 16)}}{\text{Total Library Visits}} * 100$

Rationale: People accessing the website or catalog from outside the library will reflect interest in library services. The idea of having network services is to expand the reach of libraries beyond their physical boundaries, and this performance measure can provide information about how far network services are reaching. This figure will also show the use of the library outside the regular place of business, which will be a more accurate depiction of library use. Having this measure is important to show the continued relevance of library service if physical attendance figures decrease.

Implementation

- Collected by: Local and/or vendors
- Frequency: Reported annually, although internal reporting may be more frequent (monthly, quarterly)
- Procedures:
  1. Obtain the virtual library visits count using the procedures for U5 (virtual library visits).
  2. Obtain physical attendance count from turnstile counts or swipe card records. To the extent possible, collect comprehensive data from all library branches.
  3. Combine the virtual visit count and the physical attendance count.
  4. Divide the number of virtual library visits by the total library visits.
  5. Multiply by 100. For example, a library had 1,000 external virtual visits and 9,000 physical visits for a total visit composite measure of 10,000. 1,000 virtual visits divided by 10,000 total visits equals .10 (or 10%).

P3 Percentage of Electronic Books to All Monographs

Definition: Percentage of the number of electronic books available to users (through either an individual licensing contract or other consortial arrangements) to all the library's monographs.

Rationale: Networking technology in libraries continues to improve, thereby increasing user access to electronic counterparts of some traditional sources. In the mid 90s, networking and resource sharing technologies facilitated print and e-book access through library networks. This performance measure attempts to document the degree of expansion of e-books to all monographs. Libraries should use caution while collecting this measure because the definition of e-books is itself still evolving. This statistic is an early attempt to keep track of this type of source that is becoming increasingly available.

Implementation

- Collected by: Local and vendors
- Frequency: Reported annually, although internal reporting may be more frequent (monthly, quarterly)
- Procedures:

1. Identify all types of monographic materials. Use in-house record-keeping sources and other library sources to determine the number of all monographs, including electronic books, non-electronic books, and other monographic materials.
2. Identify electronic book types, including electronic books and electronic full-text aggregate services, using the sources in step 1 of the procedures for R3.
3. Count individual electronic book titles. Record the number of individual electronic books from the spreadsheet or record the number from another source.
4. Exclude electronic reference books, i.e., publicly available electronic books that are accessed for free.
5. Calculate the total number of all monographs, including electronic books, non-electronic books, and other monographic materials.
6. Divide the number of electronic books by the number of all library monographs (electronic and non-electronic monographs).
7. Multiply by 100.
8. Indicate and describe any additional methods used outside of this definition and guidelines.

Improving Networked Statistics

With the ever-increasing portion of library collections' dollars committed to networked services, there is a pressing need to better understand the impact from the increase of such services and supporting technology. To begin overcoming the relatively little that is known about how these services are used, who uses them, and what impact these services have, the statistics and performance measures offered in this manual provide a start.

As reflected by the interest and efforts of the many ARL libraries that participated in the E-Metrics project, the development of library networked statistics and performance measures continues to receive increased attention and support. There is broad recognition of the need for network statistics and performance measures that:

- ❒ Assist libraries in making a strong case for support of technology and information infrastructure by documenting their Internet-based services and resources;
- ❒ Assist libraries in demonstrating the use of digital collections in order to make a case for continued collection development and support;
- ❒ Allow libraries to effectively compare themselves to others in terms of Internet-based collection and service development, costs, provision of services, connectivity, and use;
- ❒ Allow libraries to measure and track internal changes to library operations as well as uses and users of library resources and services;
- ❒ Enable library directors and administrative library agencies to compete for resources with other organizations and/or departments by documenting the range, extent, and impact of library-provided networked services;
- ❒ Facilitate the expansion from traditional library use measures such as circulation, reference transactions, interlibrary loans, etc., to include network measures that describe the nature and use of library-based network activities and resources;
- ❒ Provide a decision-making framework for library staff, managers, and administrators to determine resource allocation strategies and meet other management needs;
- ❒ Provide a means through which to measure the quality of library services and resources in the networked environment.

These and other factors point to the overall importance of the development, collection, and reporting of library network statistics and performance measures to facilitate collections decisions, cost analysis, justification of services, services planning and evaluation, and a host of other activities. It is hoped that the statistics and measures developed herein help fill many of the needs faced by academic and research libraries.

However, there are a number of issues and challenges that affect the library's ability to collect statistics and measures to describe its electronic resources and

services. Some academic and research libraries possess inadequate resources, staffing, and expertise to collect, manage, and report the data related to describing networked services. For these libraries, some organizational development and commitment to collecting and using these data may be necessary to take advantage of the measurement tools and techniques outlined in this manual. The discussion of measurement issues in Parts 1 through 3 of the E-Metrics Phase II Report <http://www.arl.org/stats/newmeas/emetrics/> can assist libraries in better understanding why such measurement is essential.

Appendices

Appendix A - List of Statistics Considered

Appendix B - Forms

Appendix A: List of Statistics Considered

Categories	E-Metrics v1.0 (Initial List)	E-Metrics v.1.1 (Revised List)	E-Metrics v.2.0 (Field Test List)
Resources	❒Number of electronic full text journals (hosted by library) ❒Number of electronic full text journals (through subscription) ❒Number of librarians providing electronic reference ❒Number of public access workstations	❒Number of electronic full-text periodicals (hosted by library) ❒Number of electronic full text periodicals (through institutional subscription) ❒Number of electronic full text periodicals (through consortia and other arrangements) ❒Number of electronic reference databases (through institutional subscription) ❒Number of electronic reference databases (through consortia and other arrangements) ❒Number of electronic books ❒Number of staff providing electronic reference ❒Number of public access workstations	❒Number of electronic full-text journals (institutional) ❒Number of electronic full text journals (consortia) ❒Number of electronic reference sources (institutional) ❒Number of electronic reference sources (consortia) ❒Number of electronic books (institutional) ❒Number of electronic books (consortia)
Use	❒Logins (sessions) ❒Queries (searches) ❒Turn-aways (requests exceed simultaneous user limit) ❒Items examined (viewed, downloaded, emailed, printed) ❒Total user connection time to vendor databases ❒Virtual visits to networked library reso.. ces ❒Electronic reference transactions ❒Number of people participated in user instruction on electronic resources	❒Number of logins (sessions) to networked library resources ❒Electronic reference transactions ❒Number of Logins (sessions) to electronic databases ❒Queries (searches) ❒Total connection time to electronic databases ❒Items examined (viewed, downloaded, emailed, printed) to electronic databases ❒Turn aways (requests exceed simultaneous user limit) ❒Number of people participated in user instruction on electronic resources and services	❒Number of electronic reference transactions ❒Number of logins (sessions) to electronic databases ❒Number of queries (searches) in electronic databases ❒Items examined in electronic databases
Cost	❒Cost of electronic database subscriptions ❒Cost per items examined (subscribed databases)	❒Cost of electronic files (one time/monographic purchase) ❒Cost of electronic full text periodicals subscriptions ❒Cost of electronic reference databases subscription ❒Library contribution to consortia for electronic databases	❒Cost of electronic full text journals ❒Cost of electronic reference sources ❒Cost of electronic books ❒Library expenditures for bib utilities, networks, and consortia ❒External expenditures for bib utilities, networks, and consortia
Local Digital Collection	❒Cost of internal digital collection construction	❒Cost of internal digital collection construction	❒Size of library digital collection ❒Use of library digital collection ❒Cost of digital collection construction and management
Performance Measures	❒Percentage of electronic reference transactions of total reference ❒Percentage of electronic materials use of total library materials use ❒Percentage of remote library visits of all library visits ❒Ratio of public access workstations to university population (number of faculty, staff, and students)	❒Percentage of electronic reference transactions of total reference ❒Percentage of electronic materials use of total library materials use ❒Percentage of remote library visits of all library visits ❒Percentage of electronic titles to all periodicals ❒Percentage of electronic books to all monographs ❒Ratio of public access workstations to university population ❒Cost per items examined in individually subscribed databases	❒Percentage of electronic reference transactions of total reference ❒Percentage of electronic materials use of total library materials use ❒Percentage of remote library visits of all library visits ❒Percentage of electronic books to all monographs

BEST COPY AVAILABLE

Appendix B: Forms

Forms List

Figure B.1 Sample Electronic Resource Cost Report Form

Figure B.2 Sample Consortia Expenditure Report form

Figure B.3 Sample Consortia Funding Report Form

Figure B.4 Sample Library Digital Collection Inventory Report Form

Figure B.5 Sample Digital Collection Iitems Added Report Form

Figure B.6 Sample Library Digital Collection Report Form

Figure B.7 Sample Digital Collection Access Report Form

Figure B.8 Sample Digital Collection Cost Report Form - Personnel

Figure B.9 Sample Digital Collection Cost Report Form

BEST COPY AVAILABLE

Figure B.1 (for C1-C3)

SAMPLE ELECTRONIC RESOURCE COST REPORT FORM

Reporting Period: _____

Name of library: _____

Resource/ Consortium Name and Type Full-text journals (1) Reference sources (2) Electronic books (3)	Cost	Comments
Sub Total (1)		
Sub Total (2)		
Sub Total (3)		
Grand Total (1+2+3)		

Figure B.2 (for C4)

SAMPLE CONSORTIA EXPENDITURE REPORT FORM

Reporting Period: _____

Name of library: _____

Consortium Name	Amount	Comments

Figure B.3 (for C5)

SAMPLE CONSORTIA FUNDING REPORT FORM

Reporting Period: _____

Name of library: _____

Consortium Name	Total Funding Amount	Amount Attributable to the Library	Comments

Figure B.4 (for D1)

SAMPLE LIBRARY DIGITAL COLLECTION INVENTORY REPORT FORM

Reporting period: _____

Name of library: _____

ETDs		Visual Materials		Texts		Audio/Video/Multimedia		Total	
Titles (1)		Items (2)		Titles (3)		Titles (4)		Titles (1+2+3+4)	
								Size (GB)	

Figure B.5 (for D1)

SAMPLE DIGITAL COLLECTION ITEMS ADDED REPORT FORM

Reporting period: _____

Name of library: _____

ETDs		Visual Materials		Texts		Audio/Video/Multimedia		Total	
Titles (1)		Items (2)		Titles (3)		Titles (4)		Titles (1+2+3+4)	
								Size (GB)	

Figure B.6 (for D1)

SAMPLE LIBRARY DIGITAL COLLECTION REPORT FORM

Reporting Period: _____

Name of library: _____

Project Name	Information Type 1. ETD 2. Visual Materials 3. Texts 4. Audio/Video/Multimedia	Server Name	Directory Location	No. of Titles	Size (GB)

BEST COPY AVAILABLE

Figure B.7 (for D2)

Sample Digital Collection Access Report Form

Reporting Period: _____

Name of library: _____

Project Name	Server Name	Directory Location	Title Access Count	Item Access Count	Total Searches	Comments

Figure B.8 (for D3)

SAMPLE DIGITAL COLLECTION COST REPORT FORM – PERSONNEL

Reporting Period _____

Name of library: _____

Name	Position	(Annual Salary)	FTE	(Staff Cost)

Figure B.9 (for D3)

Sample Digital Collection Cost Report Form

Reporting Period: _____

Name of library: _____

Project Name	Expense Type	Amount
Project (name) Total		
Project (name) Total		
Library Total		

U.S. Department of Education
Office of Educatonal Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

REPRODUCTION RELEASE
(Specific Document)

NOTICE

REPRODUCTION BASIS

☒ This document is covered by a signed "Reproduction Release (Blanket) form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.

☐ This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").